^{78}Se(α,^{3}He) 2007ScZX,2008Sc03

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	Balraj Singh	NDS 135, 193 (2016)	31-May-2016

2008Sc03, 2007ScZX: E=40 MeV beam provided by Yale tandem accelerator. Enriched target. Particles detected with Enge spectrograph and gas-filled focal plane detector backed by a scintillator. Measured cross sections. FWHM=70 keV. Spectroscopic factors deduced from analysis of cross section data by DWBA calculations using PTOLEMY code. The experiments were designed to determine occupation of valence neutron orbitals in the ground states of ^{76}Ge and ^{76}Se by precise measurements of cross sections through particle-transfer reactions. Cross sections were measured at angles where these are maximum.

All data listed here are from 2007ScZX.

^{79}Se Levels

Uncertainty in cross sections: statistical uncertainty of 1% for strong peaks; systematic uncertainties of 5% in absolute values and 3% in relative values.

Level	Cross-section data $d\sigma/d\Omega$ (mb/sr)	$\sigma(\alpha,^{3}He)/\sigma(d,p)(28°)$
0	0.035	0.1
137	1.549	2.98
364	0.144	0.53
519	0.0252	0.22
622	0.0225	0.037
1074	0.0285	0.35
1252	0.065	0.043
1865	0.095	≈1.8

E(level)†	Jπ†	L†	(2J+1)S′‡	Comments
0	7/2+	4		
137	9/2+	4	2.77	
364	5/2−	3	0.82	
519		1		
622		2		
1074				
1252		2		
1865		(3)	1.54	L: tentative assignment from 2007ScZX, L=4 is also possible.

† The authors take data primarily from Adopted Levels.

‡ From 2007ScZX, the optical-model parameters used for the calculations are listed by 2007ScZX.